

L 22211-65

ACCESSION NR: AP5002362

for each zone are written under the assumption that the Lewis number is unity and the heat capacity and the transfer coefficients are constant. A set of eight boundary conditions is given at the powder surface  $\xi = 0$  and in the gas, at the reaction zone  $\xi = \xi_0$ , satisfying temperature continuity flow and mass conservation, and complete consumption of reacting substances. The solution of the heat conduction equation yields

$$\begin{aligned} \theta_1' &= a \exp(r\xi + \omega\tau) \quad (r = \frac{1}{2}(1 + \sqrt{1 + 4\omega})) \\ \theta_2' &= b e^{\omega\tau} + c \exp\left(\frac{c^2}{\lambda} \xi + \omega\tau\right) - \frac{\Delta_1}{\lambda} a \xi \exp\left[\frac{c^2}{\lambda} (\xi - \xi_0) + \omega\tau\right] \\ s_1' &= k e^{\omega\tau} + l \exp\left(\frac{c^2}{\lambda} \xi + \omega\tau\right) + \frac{c^2}{\lambda} a \xi \exp\left[\frac{c^2}{\lambda} (\xi - \xi_0) + \omega\tau\right] \\ \theta_3' &= d e^{\omega\tau}, \quad \xi_1' = f e^{\omega\tau}, \quad \xi_2' = g e^{\omega\tau} \end{aligned}$$

which, together with the eight boundary conditions, generates a set of eight linear, homogeneous algebraic equations. The following stability criteria were obtained: at  $y > 1$

$$y > 1 + \sigma/2 + \frac{1}{2}[\sigma(\sigma + 8)]^{1/2}$$

and at  $y < 1$   $y < 1, \sigma > 2(y + 1)$

$$y < 1 + \sigma/2 - \frac{1}{2}[\sigma(\sigma + 8)]^{1/2}$$

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where

3

$$\left( \gamma = \frac{c_p}{c_p} = \frac{E_2(T_s - T_0)}{2HT_0} \frac{c_{p1}}{c_{p2}}, \quad \sigma = \frac{E_2}{E_1} \frac{B_1 T_0}{B_2 T_0} \frac{c_{p1}}{c_{p2}} \right)$$

The above criteria differ from

those obtained by Ya. B. Zel'dovich (X teorii goraniya porokov i vzryvchatykh veshchestv. Zh. Eksperim. i teor. fiz. 1942, t. 12, No. 11-12) by the appearance of  $\sigma$  as an additional governing parameter. For actual powders  $\sigma \approx 0.1$ . The authors are grateful to G. I. Barenblatt, Ya. B. Zel'dovich, and G. I. Leypunskiy for organizing the problem and evaluating the work. Orig. art. has: 26 formulas and 2 figures.

[04]

ASSOCIATION: none

SUBMITTED: 06Mar64

NO REF SOV: 006

ENCL: 01

OTHER: 000

SUB CODE: FF,TD

ATD PRESS: 3169

Card 3/4

L 22211-65

ACCESSION NR: AP5002862

ENCLOSURE: Q1

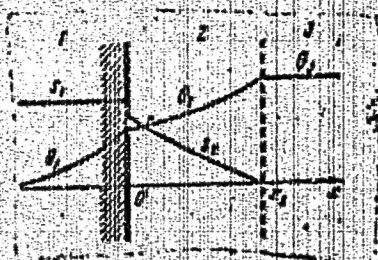


Fig. 1. Temperature distribution during combustion

Card 4/4

I. 20455-66 EWT(1)/EWT(m)/EWT(f)/T/ETC(m)-6 WW/WE  
 ACC NR: AP6009050 (A) SOURCE CODE: UR/0207/66/000/001/0067/0078  
 AUTHOR: Istratov, A. G. (Moscow); Librovich, V. B. (Moscow) 54  
 ORG: none B  
 TITLE: The stability of propagation of spherical flames  
 SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 67-78  
 TOPIC TAGS: combustion, combustion stability, combustion instability, flame, spherical flame  
 ABSTRACT: The discrepancy between the critical Reynolds number value of unity predicted by L. D. Landau's theory and the much higher experimental values has been studied by several Soviet researchers. Experiments by Shchelkin, Zeldovich, and Rozlovskiy yielded values ranging from  $10^4$  to  $10^6$  for  $Re_{cr}$ . In the present study, a theoretical analysis of the critical Reynolds number was made for spherical flames under the assumption that the flame front is a discontinuity which moves relative to the gas at a velocity which in general depends on the curvature of the flame surface. The analysis was carried out in two steps: first, the stability was analyzed with respect to the first harmonic, while assuming that the flame speed is independent of the perturbation (Landau's concept); then, the stability with respect to higher harmonics was analyzed. For this case, the effect of the perturbation on the flame speed is considered. In the first case, using Landau's approach, which does not  
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consider the transport phenomena, it was found that instability will be induced only by short wave perturbations. However, for short wave perturbations the effect of the transport phenomena, which may lead to attenuation, must be considered and therefore the above result is inconclusive. In the second case, all perturbations decrease and the individual harmonics are attenuated at a different rate. One harmonic passes through a minimum and then the other harmonics begin to grow and instability develops. In general, the analysis showed that the critical Reynolds number of spherical flames is considerably higher than that of flat flames, i.e., spherical flames are more stable. This is demonstrated by a numerical example. The high experimental  $Re_{cr}$  values must be attributed to the characteristics of the spherical flame as well as to nonlinear stabilizing effects. Orig. art. has: 58 formulas and 6 figures. [PV]

SUB CODE: 21/ SUBM DATE: 18Aug65/ ORIG REF: 009/ OTH REF: 002/ ATP PRESS:

4222

Card 2/2

L 29705-66 EWP(m)/ENT(1)/ENT(m) WE/WW/JW

ACC NR: AP6015078

SOURCE CODE: UR/0020/66/168/001/0043/0046

AUTHORS: Istrator, A. G.; Librovich, V. B.

ORG: Institute of Chemical Physics, Academy of Sciences SSSR (Institut khimicheskoy fiziki Akademii nauk SSSR)

TITLE: Hydrodynamic stability of spherical flames

SOURCE: AN SSSR. Doklady, v. 168, no. 1, 1966, 43-46

TOPIC TAGS: hydrodynamic stability, laminar flame, Reynolds number, gas combustion, *hydrodynamics*

ABSTRACT: The hydrodynamic stability of spherical flames is analyzed. The amplitude of the flame perturbation  $f$  as a function of time  $t$  is

$$f = \text{const} \cdot \left( \frac{v_0}{p} \right)^n \exp \left[ \frac{cn + d}{2n + c - 1} \frac{t}{v_0} \right].$$

where it is assumed that the flame velocity changes at the curved front and

$$v_0 = u_n/a, \quad c = \frac{an(n+1)(2n+1)}{n+2n+a}, \quad d = c(n+1).$$

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UDC: 536.463

L 29705-66

ACC NR: AP6015078

For  $\omega > 0$ , the above equation attains a minimum value for each  $n$  at different times. This time  $\tau$  is shown to depend on the Prandtl number of the cold gas, the Reynolds number, and the parameter  $\lambda$  which is a coefficient of proportionality between  $\mu$  and the flame width, or  $\tau = \frac{PrRe}{\lambda}$ . It is shown that the continuous increase in the perturbation wavelengths at the surface of combustion can increase the original Reynolds number by two orders-of-magnitude. A numerical example is given to illustrate this point. In conclusion the authors express their thanks to Ya. B. Zel'dovich for the formulation of the problem and its evaluation, to G. I. Barenblatt, O. I. Leybunskiy, and Ya. K. Troshin for valuable remarks. This paper was presented by Academician Ya. B. Zel'dovich on 18 August 1965. Orig. art. has: 7 formulas and 4 figures.

SUB CODE: 20/ SUBM DATE: 18Aug65/ ORIG REF: 006/ OTH REF: 002

Cord 2/2 CC

L 34973-66 EWT(1)/EWT(m)/T WW/JW/JWL/WE

ACC NR: AP6022523

SOURCE CODE: UR/0040/66/030/003/0451/0466

AUTHOR: Istratov, A. G. (Moscow); Librovich, V. B. (Moscow)

ORG: none

TITLE: The effect of transport processes on the stability of a flat flame front

SOURCE: Prikladnaya matematika i mekhanika, v. 30, no. 3, 1966, 451-466

TOPIC TAGS: combustion, combustion stability, combustion theory

ABSTRACT: In his previous analysis of flame stability, L. D. Landau (Zh. eksperim. i teor. fiz., 1944, v. 14, no. 6.) assumed that the Reynolds number of the perturbation is infinitely large and the thickness of the flame front, infinitely thin. In the present study, it was assumed that the Reynolds number is large but not infinite, and the following effects were taken into consideration: 1) the effects of the flame front curvature on the diffusion process, the thermal conductivity, and the viscosity at the flame front; 2) changes in the reaction rate caused by temperature fluctuations; 3) the effect of the finite width of the flame front; 4) changes in the density of the combustion products behind the flame front caused by temperature fluctuations;

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L 34973-66

ACC NR: AP6022523

and 5) the effect of viscosity on the gas motion outside the flame. An equation was derived for the critical Reynolds number in terms of the ratios of the densities of the hot and cold gases, the Prandtl number, the ratio of the thermal conductivity to diffusivity, and the dimensionless activation energy. The effects of these individual factors on flame stability is discussed. In general, the results showed that transport processes have a stabilizing effect. The authors thank G. I. Barenblatt and Ya. B. Zel'dovich for formulating and discussing the problem and O. I. Leypunskiy and V. I. Yagodkin for their valuable remarks. Orig. art. has: 47 formulas and 3 figures. [PV]

SUB CODE: 21/ SUBM DATE: 18Jan66/ ORIG REF: 007/ OTH REF: 009  
ATD PRESS: 5029

Card 2/2

JS

ISTRATOV, V.I.; TSUNIKOVA, N.I., red.

[Fundamental problems in algebra] Sbornik osnovnykh  
zadach po algebre. Moskva, Vses. zaochnyi energ. in-t,  
1963. 79 p. (MIRA 19:1)

ISTRATOV, V. N., Eng.

Electric Transformers

Current transformer, magnetized by current of increased frequency. (condensed from Bulletin ASE, No. 8, 1952, J. Goldstein). Elektrichestvo No. 2, 1953.

Monthly List of Russian Accessions, Library of Congress, June, 1953. Unclassified.

ISTRATOV, V.N., inzhener.

Commutation and protection of a direct current electric system of an airplane (Abstract from Electrical Engineering no.8:703, 731 '52. K.W. Carlson and others). Elektrichestvo no.6:80-81 Je '53. (MLRA 6:7)  
(Airplanes--Electric equipment)

ISTRATOV, V.N., inzhener.

Simplified graphic analysis of the operation of a saturation valve in a  
stabilized system, Elektrichestvo no.8:80 Ag '53. (MLRA 6:8)  
(Electric controllers)



Istratov, V.N.

AID P - 621

Subject : USSR/Aeronautics

Card 1/1 Pub. 27 - 25/35

Authors : Istratov, V. N., Kand. of Tech. Sci., and  
~~Kamenskii, A. V.~~, Eng.

Title : Differential protection of airplane D.C. generators  
(Review of Foreign Periodicals)

Periodical : Elektrichestvo, 8, 86, Ag 1954

Abstract : According to 3 USA sources, summarized by the authors,  
the increase of generated capacities and complication of  
airplane D.C. electric installations requires a constant  
improvement of protection of individual elements.  
Seven diagrams.

Institution : Not given

Submitted : No date

ISTRATOV, V. N.

AID P - 1474

Subject : USSR/Electricity

Card 1/1 Pub. 27 - 25/36

Authors : Istratov, V. N., Kand. of Tech. Sci., and  
Kamenskiy, A. V., Eng.

Title : Parallel operation of aircraft a-c generators

Periodical : Elektrichestvo, 2, 73, P 1955

Abstract : The authors summarize a group of 5 articles on the above  
subject from volume 72 of the AIEE Transactions, Part II;  
1953, 3 diagrams, 5 American references, 1953-55.

Institution: None

Submitted : No date

ISTRATOV, V.N., kandidat tekhnicheskikh nauk; KAMENSKIY, A.V., inzhener.

Protection of aircraft electrical systems. Elektrichestvo no.2:  
89-90 F '56. (MLRA 9:5)

(Airplanes--Electric equipment)

ISTRATOV, V.N., kandidat tekhnicheskikh nauk; KAMENSKIY, A.V., inzhener.

Computing the resistance in aircraft three-phase current circuits.  
Trudy MAI no.57:61-70 '56. (MLRA 9:10)

(Airplanes--Electric equipment) (Electric resistance)

ISTRATOV, V.N., kandidat tekhnicheskikh nauk; KAMENSKIY, A.V., inzhener.

Protection of aircraft generators. (Survey of basic systems).  
Trudy MAI no.57:76-81 '56. (MLRA 9:10)

(Airplanes--Electric equipment)



ISTRATOV VIV  
INOZEMTSEV, S.P., kandidat tekhnicheskikh nauk; ISTRATOV V.M., kandidat  
tekhnicheskikh nauk; KAMENSKIY, A.V., inzhener.

Automatic frequency control of airplane a.c. generators operating  
in parallel. Trudy MAI no.66:69-73 '56. (MLRA 9:11)  
(Electric generators)  
(Airplanes--Electric equipment)

ATAREKOV, Grigoriy Iosifovich; ISTRATOV, V.N., kandidat tekhnicheskikh nauk,  
redaktor; SUVOROVA, I.A., izdatel'skiy redaktor; SEKHENOV, P.V.,  
tekhnicheskiiy redaktor

[Linear electric circuits] Lineinye elektricheskie tsepi. Moskva,  
Gos. izd-vo obor. promyshl., 1957. 173 p. (MIRA 10:2)  
(Electric circuits)

*ISTRATOV, V.N.*  
ATAEKOVA, Grigoriy Iosifovich, professor; MEL'NIKOV, N.A., redaktor;  
ISTRATOV, V.N., redaktor; LARIONOV, G.Ye., tekhnicheskii re-  
daktor.

[Theoretical principles of relay protection of high voltage systems]  
Teoreticheskie osnovy releinoi zashchity vysokovol'tnykh setei. Mo-  
skva, Gos.energ.isd-vo, 1957. 344 p. (MIRA 10:5)  
(Electric relays)

ISTRATOV, V.N., kand. tekhn. nauk; MITYUSHINA, V.V., inzh.

Calculating short-circuit currents in airplane three-phase electric  
circuits. Trudy MMI no.85:84-88 '57. (MLRA 10:9)  
(Short circuits)

251K710V V N  
BERTINOV, Al'bert Iosifovich, RIZNIK, Galina Anatol'yevna, ISTRATOV, Y.M.,  
kand. tekhn. nauk, red.; KUZNETSOVA, A.G., izd-red.; PUKHLIKOVA, N.A.,  
tekhn. red.

[Designing direct current electric machinery for aviation; teaching  
aid] Proektirovanie aviatsionnykh elektricheskikh mashin postoiannogo  
toka; uchebnoe posobie, Moskva, Gos. izd-vo obr. promyshl., 1958  
422 p. (MIRA 11:8)

(Electric machinery)

(Airplanes--Electric equipment)



Is. I. R. A. T. O. V. , Y. A. N.

1(1); 28(1)	FRASE I BOOK EXPLOITATION	SOV/3180
	Moscow. Aviatsoyuznyy institut imeni Sergo Ordzhonikidze	
	Elektricheskiye tsipi i elementy avtomaticheskikh ustroystv, sbornik statey (Electric Circuits and Components of Automatic Systems; Collection of Articles) Leningrad. Sudoproviz. 1958. 86 p. (Series: ITS; Trudy, v. 102) Errata slip inserted. 5,100 copies printed.	
	Sponsoring Agency: U.S.S.R. Ministerstvo vyznashgo obrazovaniya.	
	Resp. Ed.: G.I. Atabekov; Ed. (Title page): G.I. Atabekov, Doctor of Technical Sciences, Professor; Ed. (Inside book): V.S. Chichkanova; Tech. Ed.: M.E. Tsai.	
	PURPOSE: This collection of articles is intended mainly for persons engaged in problems of electrical engineering and automation in aviation.	
	COVERAGE: The collection contains articles dealing with the analysis and design of components of automatic control systems and also with the method of calculating the parameters of the two wire-frame aircraft systems. The articles are based on the work carried out in 1956 and 1957 by the Scientific Department of Theoretical Electrical Engineering of MAI. The collection is characterized by two basic approaches: 1) theoretical and experimental investigation and development of methods of designing the components of automatic control systems and electrical systems of aircraft, 2) theoretical development of methods of calculating electric circuits. Most of the articles in this collection are a continuation of works published in the preceding collections by the above Department (Trudy MAI, 1956, No. 66 and 1957, No. 85, Oborondis). No personalities are mentioned. References follow most articles.	
	Atabekov, G.I., Candidate of Technical Sciences. Electrical Parameters and Calculation of the Transverse Asymmetry of a Two-Wire Aircraft Frame. The author investigates the electrical parameters of an asymmetric circuit for various cases of transverse asymmetry and finds their symmetrical components for generator currents.	43
	Kovyan, A.A., Engineer. Method of Electrical Calculation of Systems of Two-Wire Aircraft Frame. The author presents his method of calculation.	68
	Xilography	73
	Kovyan, A.A., Engineer. Electrical Calculation of Systems of Two-Wire Aircraft Frame with Asymmetric Loads. The author outlines his method of calculation and presents a numerical example.	71
	Xilography	76
	Ishtakov, V.N., Candidate of Technical Sciences. Some Conditions for Optimum Performance of Pulse Protection Against Short-Circuits in D-C Systems. The author describes the type of differential pulse protection used, finds analytically the conditions for optimal performance, and presents a numerical example of calculations.	79

PHASE I BOOK EXPLOITATION SOV/3622

Moscow. Aviatsionnyy institut imeni Sergo Ordzhonikidze. Kafedra teoreticheskoy elektrotekhniki

Sbornik zadach po teoreticheskim osnovam elektrotekhniki (Collection of Problems on Theoretical Fundamentals of Electrical Engineering) Moscow, Oborongiz, 1959. 124 p. 14,000 copies printed. Errata slip inserted.

Additional Sponsoring Agency: RSFSR. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.

Ed. V.N. Istratov, Candidate of Technical Sciences, and S.D. Kupalyan, Candidate of Technical Sciences; Managing Ed.: A.S. Zaymovskaya, Engineer; Ed. of Publishing House: S.D. Antonova; Tech. Ed.: I.M. Zudakin.

PURPOSE: This collection of problems is intended for students in electromechanical, electrical engineering, and radio engineering departments of schools of higher technical education. It may also be used by technical personnel who desire to improve their

Card 1/4

Collection of Problems (Cont.)

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technical qualifications in the field of calculating electric circuits.

**COVERAGE:** This collection contains several problems related to basic subjects of the theory of circuits according to the program of the course on theoretical principles of electrical engineering. Some typical problems with detailed solutions are given. Conventional symbols and terminology used in the book comply with those adopted in two books by G.I. Atabekov: "Garmonicheskiy analiz i operatornyy metod" (Harmonic Analysis and Operational Method), Oborongiz, 1956; and "Lineynyye elektricheskiye tsepi" (Linear Electrical Circuits), Oborongiz, 1957. Chapters 1 and 2 were prepared by N.V. Uspenskaya; chapter 3 by V.N. Istratov; chapters 4 and 7 by S.N. Dmitriyev; chapter 5 by M.G. Surov; chapter 6 and the Appendix by O.M. Bogatyrev; chapter 8 by S.D. Kupalyan; chapter 9 by A.V. Kamenskiy; chapter 10 by A.B. Timofeyev; and chapter 11 by S.S. Khukhrikov. The authors thank Professor G.I. Atabekov for his help. There are no references.

Card 2/4

Collection of Problems (Cont.)

SOV/3622

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Collection of Problems (Cont.)

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AVAILABLE: Library of Congress (TK 168.M58)

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JP/jb  
6-8-60



AGETKIN, Dmitriy Ivanovich, prepodavatel'; BALASHOV, Mikhail Aleksandrovich, prepodavatel'; KOLOSOV, Sergey Petrovich, prepodavatel'; NEPEDOVA, Valentina Ivanovna, prepodavatel'; RESHETNIKOV, Yevgeniy Mikhaylovich, prepodavatel'; SOKOLOV, Nikolay Ivanovich, prepodavatel'; STROMILOV, Vasilii Mikhaylovich, prepodavatel'; TISHCHENKO, Nikolay Mikhaylovich, prepodavatel'; UDALOV, Nikolay Petrovich, prepodavatel'; PETROV, B.N., prof., red.; ISTRATOV, V.N., kand.tekhn.nauk, dotsent, red.; SHEKHTMAN, E.A., isdat.red.; ROZHIN, V.P., tekhn.red.

[Manual for designing elements and systems of automatic control; a textbook for a course in designing] Rukovodstvo po proektirovaniu elementov i sistem avtomatiki; posobie po kursovomu proektirovaniu. Pod red. B.N.Petrova. Moskva, Gos.isd-vo obor. promyshl. Pt.2. 1959. 247 p. (MIRA 12:6)

1. Chlen-korrespondent AN SSSR (for Petrov). 2. Moskovskiy aviatsionnyy institut imeni Sergo Ordshonikidse (for all except Istratov, Shekhtman, Roshin).

(Automatic control)

BERTINOV, Al'bert Iosifovich; LARIONOV, A.N., prof., doktor tekhn.nauk, retsenzent; ROMANOV, M.F., doktor tekhn.nauk, retsenzent; ATABEKOV, G.I., prof., doktor tekhn.nauk, retsenzent; GOLGOFSKIY, F.I., inzh., retsenzent; FEDOSEYEV, A.F., kand. tekhn.nauk, retsenzent; ISTRATOV, V.N., kand.tekhn.nauk, red.; PETROVA, I.A., izdat.red.; GARNUKHINA, L.A., tekhn.red.

[Aeronautical electric generators] Aviatstsionnye elektricheskie generatory. Moskva, Gos.izd-vo obor.promyshl., 1959. 594 p.  
(MIRA 12:7)

1. Chlen-korrespondent AN SSSR; zaveduyushchiy kafedroy aviatstsionnogo i avtotraktornogo oborudovaniya Moskovskogo energeticheskogo instituta in.Meletova (for Larionov).  
(Electric generators) (Airplanes--Electric equipment)

SOV/143-59-9-8/22

8(6), 9(2)

**AUTHORS:**

Istratov, V.N., and Kolosov, S.P., Candidates of Technical Sciences, ~~Docents~~

**TITLE:**

A Converter for Changing a Single-Phase System to a Three-Phase One

**PERIODICAL:**

Izvestiya vysshikh uchebnykh zavedeniy, Energetika, 1959, Nr 9, pp 48-52 (USSR)

**ABSTRACT:**

The authors describe one of the possible circuit arrangements for converting a single-phase voltage into a three-phase voltage. The suggested circuit, shown in fig.1, contains only one reactive element. This circuit produces a higher stability of conversion than the known versions with several reactive elements, described by A.M. Bandas, V.A. Kulinich (Ref.4). Other converters, which do not consist of rotary elements, are described in the papers of G.I. Atabekov (Ref.2), P.L. Kalantarov, and L.R. Neyman (Ref.3). The authors present formulas for the calculation of circuit elements of the converter described in this paper and give recommendations for selecting the parameters. The work of the circuit may be a-✓

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SOV/143-59-9-8/22

**A Converter for Changing a Single-Phase System to a Three-Phase One**

chieved with commensurable values of the input and load resistances and small capacitances of capacitors. The paper was presented by the Kafedra teoreticheskoy elektrotekhniki (Chair of Theoretical Electrical Engineering). There are 1 circuit diagram, 1 diagram, 1 graph and 4 Soviet references.

**ASSOCIATION:** Moskovskiy ordena Lenina aviatsionnyy institut imeni S. Ordzhonikidze (Moscow - Order of Lenin - Aviation Institute imeni S. Ordzhonikidze) ✓

**SUBMITTED:** May 20, 1959

Card 2/2

ATABEKOV, G.I.; ISTRATOV, V.N., red.; MASHAROVA, V.G., red.; SMUROV,  
B.V., tekhn.red.

[Theory of linear electric networks] Teoriia lineinykh  
elektricheskikh tsepei. Moskva, Izd-vo "Sovetskoe radio,"  
1960. 711 p. (MIRA 13:10)  
(Electric networks)

ISTRATOV, V.P.

MARGOLIN, I.S., inzhener (Moskva).; ISTRATOV, V.P., inzhener (Moskva).

On parallel supply of the trolley contact circuit from adjacent  
substations. Elektrichestvo no.3:28-32 Mr '57. (MIRA 10:4)  
(Street railways)

ISTRATOV, V.P.

RYBAKOV, A.D., inzh.; ISTRATOV, V.P., inzh.; MARGOLIN, I.S., inzh.

Ways to eliminate stray currents in Moscow street railways. Gor.  
khoz. Mosk. 32 no. 4:24-27 Ap '58. (MIRA 11:4)  
(Moscow--Street railways) (Electric currents, Leakage)

ИСИРАЛОВ, В. П., (Engr.)

"Measures Taken at the Moscow Tramlines for Fighting Stray Currents"

report presented at the Odessa Conference on the Fighting of Corrosion caused  
by Stray Currents, Nov 1957, Odessa Branch NTOEP (Elektrichestvo, 1958, No.4, p83)



YEFREMOV, I.S., doktor tekhn. nauk; REKITAR, R.A., inzh.;  
 ROZENBERG, S.V., kand. ekon. nauk; BLATNOV, M.D., kand.  
 tekhn. nauk; VIL'KONETSKIY, M.S., inzh.; TOMILIN, A.I., inzh.;  
 POPELYASH, V.N., inzh.; ZAGAYNOV, N.A., kand. tekhn. nauk;  
 FINKEL'SHTEYN, B.S., inzh.; MARINOV, I.A., inzh.; ISTRATOV, V.P.,  
 inzh.; MARGOLIN, I.S., inzh.; ENGEL'S, G.G., inzh.; ANTONOV,  
 V.A., inzh.; SOKOLOV, V.D., inzh.; KLESHCHINSKIY, B.K., inzh.;  
 IL'INSKIY, A.I., retsenzent; PAPKOV, N.G., retsenzent; SMIRNOV,  
 G.M., retsenzent; SHPOLYANSKIY, M.N., otv. red. toma; VOLOCHNEV,  
 V.N., red.; TROFIMOV, A.N., red.; RACHEVSKAYA, M.I., red. izd-va;  
 LELYUKHIN, A.A., tekhn. red.

[Technical manual on city electric transportation in three  
 volumes] Tekhnicheskii spravochnik po gorodskomu elektro-  
 transportu v trekh tomakh. Redkollegiia: V.N.Volochnev, A.N.  
 Trofimov, M.N.Shpolianskii. Moskva, Izd-vo M-va kommun. khoz.  
 RSFSR. Vol.1. [City electric transportation (general part)]  
 Gorodskoi elektricheskii transport (obshchaya chast'). Otv.  
 red. toma M.N.Shpolianskii. 1961. 726 p. (MIRA 15:4)  
 (Streetcars) (Trolley buses)

KUTEYNIKOV, Ye.S.; ISTRATOV, V.V.

Recent data on the tectonics of the Kyutingde transverse trough  
in the Northeast of the Siberian Platform. Dokl. AN SSSR 148  
no.2:414-417 Ja '63. (MIRA 1642)

1. Vsesoyuznyy aerogeologicheskiy trest i Tsentral'naya komplektnaya  
geofizicheskaya ekspeditiya Yakutakogo geologicheskogo upravleniya.  
Predstavleno akademikom D.I. Shcherbakovym.  
(Kyutingde Valley—Geology, Structural)

ISTRATOVA. A. YA.;NOVIKOVA, A. A.

Nurses and Nursing

Role and obligation of the head nurse in pediatric infectious ward. Med. sestra No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1953<sup>1/2</sup> Unclassified.

ISTRATOVA, O.T.

Storage and germination of the pollen of some conifer species.

Biul.glav.bot.sada no.43:53-56 '61.

(MIRA 15:2)

1. Sochinskaya nauchno-issledovatel'skaya opytnaya stantsiya  
subtropicheskogo lesnogo i lesoparkovogo khozyaystva.

(Pollen—Storage) (Coniferae)

ISTRATOVA, O.T.

Decorative forms of the tulip tree and their biological characteristics. Biul.Glav.bot.sada no. 48:42-47 '63. (MIRA 17:5)

1. Nauchno-issledovatel'skaya opytnaya stantsiya subtropicheskogo lesnogo i lesoparkovogo khozyaystva, Sochi.

ISTRATOVA, O.T.

Biology of the flowering of Douglas fir. Biul.Glav.bot.sad  
no.52:67-76 '64. (MIRA 17:4)

1. Sochinskaya nauchno-issledovatel'skaya opytnaya stantsiya  
subtropicheskogo lesnogo i lesoparkovogo khozyaystva.

S/124/61/000/008/029/042  
A001/A101

11.7200

AUTHORS: Klyachko, L. A., Istratova, Z. V.

TITLE: On the theory of the lower limit of flame propagation in a two-phase mixture

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 8, 1961, 75, abstract 8B524  
(V sb. "3-ye Vses. soveshchaniye po teorii goreniya. T. 2". Moscow, 1960, 48-57)

TEXT: The authors investigate a dependence between the lower limit of flame propagation in a monodispersed two-phase mixture and the size of liquid fuel drops at rest. Preliminarily the problem is considered on conditions for self-ignition of an immobile drop in heated air. The critical condition of drop self-ignition is derived, which consists in the equality of evaporation time and period of ignition delay. The results of experiments with ethyl alcohol and isooctane agree well with calculations by the formula derived. Then it is assumed that flame propagation in a two-phase mixture is possible if the "life" time of a hot drop and the induction period of a steam-air mixture, surrounding the drop, are equal. Calculations are performed on the basis of G. A. Varshavsky's

/B

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On the theory of the lower limit ...

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A001/A101

theory of drop burning. The results of experiments with tetralin ( $C_{10}H_{12}$ ) confirm basically the relation between the change in the lower limit position of flame propagation and drop size, which was derived from calculations.

A. Zenin

[Abstracter's note: Complete translation]

Card 2/2



L 16330-65 BMT(m)/EWA(d)/EWP(j)/T/EWP(t)/EWP(b) 7d-1 ASD(m)-3 24/MJ/15/RB

ACCESSION NR: AP4049181

S/0314/64/000/005/0029/0031

AUTHOR: Liferenko, I. G. (Candidate of technical sciences), Istrian, A. F., Frolikova, Ye.

TITLE: Corrosion resistance of cast OKh21N6M2T steel during production of dimethylterephthalate

SOURCE: Khimicheskoye i neftyanoye mashinostroyeniye no. 6, 1964, 29-31

TOPIC TAGS: chromium steel, steel corrosion, cast steel, pump manufacture, steel mechanical property, steel corrosion resistance, dimethylterephthalate production/steel OKh21N6M2T

ABSTRACT: The production of dimethylterephthalate, used for obtaining synthetic fibers and films, requires pumps made of Kh18N12M2T steel, which is quite expensive. A cheaper OKh21N6M2T steel has therefore been tested for corrosion resistance. The foundry laboratory of VIGM tested the castability, shrinkage, macrostructure and microstructure of the cheaper steel. The tests showed good casting and mechanical properties of the steel (ultimate strength 69.5-76.1 kg/mm<sup>2</sup>, relative elongation 25.6-34.8%, impact toughness 5-11.9 kg-m/cm<sup>2</sup> and Brinell hardness 187). The chemical composition of the tested steel was 0.01-0.10% C, 0.38-0.80% Si, 0.53-1.38% Mn,

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ACCESSION NR: AP4049181

17.8-20.97 Cr, 5.75-12.10% Ni, 0.15-0.57% Ti, 2.08-2.91% Mo, 0-0.027% P, and 0-0.0275% S). Intercrystalline corrosion was first tested according to GOST 6032-58.

The performed tests, both in the laboratory and at the plants, showed that cast and welded samples of OKh21N6M2T steel had high corrosion resistance. Metallographic analysis showed an absence of intercrystalline and selective corrosion on the samples. No traces of corrosion were found on a pump impeller made of this steel. "Engineers G. F. Aksenov and A. I. Porshneva took part in studying the casting properties of the steels." Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM IE

NO REF SOV: 000

OTHER: 000

Card 2/2

RUMANIA / Organic Chemistry. Synthetic Organic Chemistry. G-2

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 77623.

Author : Polovrageanu, I., Gherghinof, R., and Istric, E.

Inst : Not given.

Title : Helografin-N, N-adipyl-bis-(3-amino-2,4,6-triiodo-benzoic) Acid.

Orig Pub: Farmacia (Romania) 6, No 2, 187-190 (1958) (in Rumanian with summaries in German, French, English, and Russian).

Abstract: A new contrasting medium has been synthesized for internal use in X-ray studies of the intra- and extrahepatic bile ducts. The new compound has the formula  $(3\text{-HOOC-2,4,6-I}_3\text{ C}_6\text{ HNHOC(CH}_2)_2)_2$  (I) and has been named helografin. I is synthesized by the reaction of  $\text{ClOC(CH}_2)_4\text{ COCl}$  (II) with two molecules of  $3\text{-HOOC-2,4,6-I}_3\text{ C}_6\text{ HNH}_2$  (III); 0.5

Card 1/2

ISTAIN, G.P.

Conference on the rehabilitation of the areas of worked out peat fields.  
Torf.prom. 38 no.1:37 '61. (MIRA 14:2)  
(Peat industry)

[illegible]

ISTRIN, M. A.; LEVITIN, V. Kh.; RUBINSHTEYN, I. G.; and BAZILEVSKIY, V. M.

"Secondary Nonferrous Metals (Handbook. Part I - Preparation and Preliminary Working)," Metallurgizdat, 1950. 475 pp.

Comments and evaluation, B 77881, 16 Aug 54

ISTRIN, Mikhail Aleksandrovich; LEVITIN, Vul'f Khananovich; RUBINSHTEYN, Iosif Grigor'yevich; MILLER, Solomon Mikhaylovich; MILLER, L.Ye., kandidat tekhnicheskikh nauk, retsenzent; BELOV, V.Ya., redaktor; CHERNOV, A.N., redaktor; ARKHANGEL'SKAYA, M.S., redaktor izdatel'stva; MIKHAYLOVA, V.V., tekhnicheskiy redaktor

[Secondary nonferrous metals] Vtorichnye tsvetnye metally; spravochnik. Izd. 3-e, perer. i dop. Pod red. V.IA.Belova. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Pt.1. [Procurement and primary processing] Zagotovka i pervichnaya obrabotka. 1956. 558 p. (MIRA 9:7)  
(Nonferrous metals)

BAZILEVSKIY, Viktor Mamertovich; ISTRIN, Mikhail Aleksandrovich; BARTASHEV, Ibor' Leonidovich; LYUBALINA, Soviya L'vovna; ~~ISTRIN, Mikhail~~ Davydovich; SHPAGIN, A.I., kandidat tekhnicheskikh nauk, retsenzent; VISSARIONOV, B.G., inzhener, retsenzent; KRASHNINNIKOV, S.S., retsenzent; FEL'DMAN, I.Ye., retsenzent; YAFAYEV, L.V., retsenzent; KOMAYEVA, O.M., redaktor izdatel'stva; MIKHAYLOVA, V.V., tekhnicheskiiy redaktor

[Secondary nonferrous metals; a reference manual] Vtorichnye tsvetnye metally; spravochnik. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii. Pt.3. [Metallurgy of copper and lead] Metallurgiya medi i svintsa. 1957. 544 p. (MIRA 10:3)  
(Copper--Metallurgy) (Lead--Metallurgy)



*Istrin, M.A.*

136-8-15/21

AUTHOR: Istrin, M.A., Engineer

TITLE: Conference in Prague on Economy of Non-Ferrous Metals  
(Soveshchaniye po ekonomii tsvetnykh metallov v g.Prage)

PERIODICAL: Tsvetnye Metally, 1957, Nr 8, pp.77-78 (USSR)

ABSTRACT: Proceedings at the first conference of the non-ferrous metals economy section of the Permanent Commission on economic and scientific-technical co-operation in the non-ferrous metals field of participants in the Council for economic mutual aid (Sovet ekonomicheskoy vsaimopomoshchi) are outlined. It was held 25th April-3rd May, 1957, in Prague, and was attended by delegates from Bulgaria, Hungary, E.Germany, Poland, the USSR and Czechoslovakia, and observers from China. The conference heard reports on work carried out and planned measures for saving copper, lead and nickel and the introduction of substitutes, and also considered the work of the section in 1957 and the first quarter of 1958. The following questions were recommended for investigation:

- (a) use of aluminium windings on motors up to 38 KW;
- (b) use of aluminium and plastics in power cables;
- (c) use of aluminium windings in dry and oil transformers

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136-8-15/21

Conference in Prague on Economy of Non-Ferrous Metals.

up to 1600 kVA;

(d) use of enamelled heat resisting wire with isoperlon insulation for motors;

(e) use of aluminium-base and zinc base alloys as well as anti-friction cast irons and non-metallic materials in bearings;

(f) replacement of lead by plastic glass etc. acid-resisting materials;

(g) use of tinsplate or aluminium for car radiators;

(h) use of brass with low copper contents (48%) for bearings;

(i) use of spectroscopic analysis for sorting scrap;

(j) use of electric shaft furnaces for melting scrap;

(k) use of aluminium coinage.

The next meeting is scheduled for November 1957, in East Germany.

AVAILABLE: Library of Congress.

Card 2/2

*ISTRIN, M. A.*

137-58-5-9399

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 86 (USSR)

AUTHOR: Istrin, M. A.

TITLE: Secondary Aluminum Production in the USSR (Proizvodstvo vtorichnogo alyuminiya v SSSR)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 8, pp 109-111

ABSTRACT: Recovery of secondary Al is now more than 100 times as large as in 1932, and more than 20 grades of Al alloys are being produced in accordance with technical specifications. Preparation and dressing of the raw material (concentration of slags, calcining and packaging of chip, and cutting of large scrap are mechanized. Smelting is in reverberatory furnaces of up to 15 t capacity (mostly of the two-chamber type). Furnace output is 3.2 t/m<sup>2</sup> hearth (in 1945 it was 1.38 t/m<sup>2</sup>). 91.3% of the metal is now recovered, as against 83.6% in 1945. Machine charging and teeming onto conveyor-type casting machines is employed at all plants. At the Sukholozhskiy and Khar'kov plants the waste slags are allowed to settle in special settling furnaces, and this results in further recovery of metal. The quality of the secondary alloys obtained differs very little from that of alloys made

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137-58-5-9399

Secondary Aluminum Production in the USSR

from primary metals, and in the near future the term "secondary alloy" will characterize origin and not quality.

A.P.

1. Aluminum--Production
  2. Aluminum alloys--Production
  3. Industrial plants
- Equipment

Card 2/2

*I STRIN, M.A.*

136-10-9/13

AUTHOR: Istrin, M.A.

TITLE: Development of Secondary Non-Ferrous Metallurgy in the USSR.  
(Razvitiye vtorichnoy tsvetnoy metallurgii v SSSR).

PERIODICAL: Tsvetnyye Metally, 1957, Nr 10, pp.59-62 (USSR)

ABSTRACT: The working of scrap copper and copper-base alloys was first organized in the USSR in 1921. The author describes developments since then, giving some information on equipment and its utilization at various plants working copper- and aluminium-alloy scrap. A table shows data for 1940, 1945, 1950 and 1956 for the daily production of metal per m<sup>2</sup> of furnace hearth when working bronze, brass and aluminium and the corresponding recoveries of metal. The author mentions the work of the Glavvtortsvetmet organization, which is responsible for most aspects of the secondary non-ferrous metals industry. He states that the quantity of scrap prepared by the organization in 1956 was 2.5 times that in 1940 and that the USSR occupies first place in Europe in the production of secondary non-ferrous metals. There is 1 table.

AVAILABLE: Library of Congress.

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ISTRIN, M.A., inzh.

Conference on the economy of copper and lead in the national economy  
of the U.S.S.R. TSvet. met. 31 no.8:83-85 Ag '58. (MIRA 11:9)  
(Copper) (Lead) (Russia--Economic policy)

AUTHOR: Istrin, M.A.

SOV/136-59-2-21/24

TITLE: Conference on Secondary Non-Ferrous Metals (Soveshchaniye po vtorichnym tsvetnym metallam)

PERIODICAL: Tsvetnyye Metally, 1959, Nr 2, pp 85-87 (USSR)

ABSTRACT: The third conference of the non-ferrous metals economy section of the Permanent Committee on Economic and Scientific and Technical Co-operation in the field of Non-ferrous Metallurgy of the participating nations of the Sovet Ekonomicheskoy Vzaimopomoshchi (Council for Mutual Economic Aid) was held in Moscow on 9th-20th December 1958. The conference heard and discussed the following reports from representations of the various nations: "Organisation of the Preparation and First Treatment of Non-Ferrous Metal Scrap and Waste" (S.M.Eydis reported for the USSR); "Production of Secondary Aluminium-Base Alloys" (Engineer A.A.Gaylit for the USSR); "Production of Secondary Copper-Base Alloys" (V.M.Bazilevskiy, Candidate of Technical Sciences for the USSR); P.S.Shesternin, Candidate of Technical Sciences on "Results of Trials of an Electric Shaft Furnace for

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SOV/136-59-2-21/24

Conference on Secondary Non-Ferrous Metals

Reclaiming Melting of Lead Scrap and Waste". The consumption of secondary non-ferrous metals in some of the centres represented is half the total consumption. The author tabulates for the various nations 1958 productions as percentages of those for 1953 and planned 1965 productions as percentages of those for 1958 for copper, lead and zinc. He notes that production possibilities are not everywhere being fully utilised. The conference made recommendations for improving the situation and urged especially better scrap collection, storage and preparation. The importance of dust catching to avoid zinc losses was stressed. The formation of a working group to study melting practice for secondary aluminium alloys was urged; for melting copper-base scrap the conference recommended the induction furnace. The next conference of the section was planned for February 1959 in Prague;

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SOV/136-59-2-21/24

Conference on Secondary Non-Ferrous Metals

an exhibition on non-ferrous metals economy was  
recommended for that town for June 1959. There is  
1 table.

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S/136/60/000/02/001/022  
E193/E483

AUTHOR: Istrin, M.A.

TITLE: For Economical and Intelligent Utilization of Non-Ferrous Metals

PERIODICAL: Tsvetnyye metally, 1960, Nr 2, pp 1-6 (USSR)

ABSTRACT: The author of this editorial discusses the implication of the directives of the Central Committee of the Communist Party USSR, regarding the rational use of non-ferrous materials. He first comments on the enthusiastic response to the appeal of the Central Committee, in which numerous organizations have been asked to exercise strict economy in using various non-ferrous metals that are expensive or in short supply (copper, nickel, tin, lead etc) and to suggest new means of reducing the consumption of these materials. Thousands of replies have been received, the following being a sample selection of the suggestions put forward:  
(1) salvage of collapsible tin tubes should be organized or steps should be taken to use plastic instead of tin in the production of collapsible tubes; the latter measure would result in saving more than 250 t of tin per year;  
(2) at present, both the outside and inside surfaces of

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For Economical and Intelligent Utilization of Non-Ferrous Metals

containers used in the tinned food industry are tin-plated; hundreds of tons of tin could be saved if the layers of tin inside the containers were replaced by a layer of approved corrosion-resistant lacquer; (3) large savings could be attained by using other materials in the fabrication of many parts of the passenger railway carriages that at present are unnecessarily made of non-ferrous metals; (4) a large quantity of tin and aluminium is wasted in the form of thrown-away milk and soft drink bottle tops; a very ingenious design of stopper, doing away with the use of non-ferrous metals, has been submitted.

While the sum total of savings, attained by these and other similar measures, would make a not-to-be-despised contribution to the solution of the problem under consideration, there are many other, more important, ways of achieving this end and these are discussed in the next paragraphs of the present paper. In the electrical industry alone, 400000 t of copper and 300000 t of tin can be saved by wider application of aluminium as the

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For Economical and Intelligent Utilization of Non-Ferrous Metals

material for cables and cable-sheathing; this would mean an annual saving of 2 milliards roubles. About one-third of the total quantity of copper consumed by the cable-making industry is used in the windings of electric motors, transformers and other equipment; the fact that a hundred high-power, three-phase, aluminium-wound transformers have been produced in 1959 at the Zaporozhski Transformer Plant indicates that in this field too economies can be made (283 kg of copper required for one transformer can be replaced by 205 kg of aluminium). More than 13000 t of copper could be saved during the present 7-year plan period by using oxidized aluminium foil instead of copper windings in the fabrication of contactors, magnetic brakes, relays, coils etc. Aluminium can be also used successfully in the distribution systems as has been shown by the designers of the Zaporozhski Plant who, by using profiled aluminium conductors, saved 100000 t of copper in one year. The machine-building industry is another large consumer of non-ferrous metals; thousands of tons of bronze and Babbitt are used every year in the manufacture of bearings

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For Economical and Intelligent Utilization of Non-Ferrous Metals

and other moving components, although there is a number of substitutes of proven quality such as certain plastics, caprone, textolite, pressed wood, cast iron, special steels, bi-metals and aluminium- and zinc-base bearing alloys; application of the bi-metal strip, made of iron-aluminium alloy ASM, in the manufacture of main and connecting rod bearings for tractor engines (instead of the previously used, bronze BS-30 bushes) could give a saving of 14000 t of copper and 7000 t of lead during the running 7-year period. A new bearing alloy, TsAM9-1.5, containing 8 to 11% Al, 1 to 2% Cu, 0.03 to 0.06% Mg, remainder Zn, has been developed by TsNII MPS; this alloy has found a wide application in the rail transport industry as a substitute for tin bronzes and for calcium and tin Babbitts; comparative properties of this alloy and bronze BrOTsS5-5-5 are given in Table 1 which includes: specific gravity, g/cm<sup>3</sup>; melting point, °C; UTS, kg/mm<sup>2</sup>; ultimate compressive strengths, kg/mm<sup>2</sup>; Brinnell hardness, kg/mm<sup>2</sup>; elongation, %; friction coefficient with and without lubricant; wear, due to friction, kg/mm<sup>2</sup> with and without lubricant. Prolonged field trials,

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conducted under most exacting conditions, have shown that the new alloy is, in some respects, better than bronze and yet this alloy has found little application in other branches of the machine-building industry, although its price is only 4 roubles per 1 kg against 9 roubles per 1 kg of bronze. Caprone is another useful substitute; it is being used at the Kolomenski Plant as the material of the plunger and guiding columns bushes, 2 t of bronze being saved in this way per press; the components, made of caprone, are 3 to 4 times cheaper and several times lighter than the same components made of non-ferrous materials. Pressed wood, possessing good physical, mechanical and anti-frictional properties, is also a very useful constructional material that can replace non-ferrous metals in the manufacture of various equipment for the textile, food, cement and paper-making industries. There is a large field for improvement in the existing foundry techniques: flame furnaces should be replaced by electrical induction furnaces, the losses on melting in the latter being only half of those in the former type; the large proportion (30 to 40%) of scrap

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produced during machining of parts cast in the sand moulds could be reduced to 10 to 15% by using metal moulds and/or by wider application of centrifugal casting, pressure-die casting etc. The consumption of copper, bronze and brass in the industry producing the sanitary armature could be halved by wider application of plastics, ceramics, porcelain and other non-metallic materials. New alloys with a lower content of scarce metals should be more widely used in the machine-building industry; brass LNMtsZhA62-1-1-1, developed a few years ago as a substitute for silicon bronzes and calcium and brasses (LK80-3, LMts58-2, LS59-1) is one of these materials; the properties of these four alloys are given in Table 2, showing: melting point, °C; UTS, kg/mm<sup>2</sup>; ultimate compressive strengths, kg/mm<sup>2</sup>; elongation, %; Brinnell hardness, kg/mm<sup>2</sup>; friction coefficient (with lubricant); corrosion resistance (loss of weight in 2% water solution of sodium chloride, g/mm<sup>2</sup>/24 h). Replacing the silicon bronze with the LNMtsZhA62-1-1-1 brass would result in an annual saving of 2000 t of copper. Large economies in

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the consumption of rod brass can be achieved by using arsenical brass (0.05% As) as the material for steam turbine condenser pipes and car and tractor radiators, while wider application of various bi-metals (steel/copper, steel/brass, steel/aluminium, steel/stainless steel) would lower the consumption of other non-ferrous materials. Considerable savings of scarce, non-ferrous metals can be attained by wider application of titanium in the fabrication of components exposed to corrosive and/or oxidizing conditions. Since 80% of nickel, produced at present in the USSR, is used in the production of stainless steels, the consumption of this metal could be reduced by the introduction of the following measures: (1) increasing the production of nickel-free or low nickel content stainless and constructional steels (eg steels 08Kh13, Kh17T, 15KhR, 20KhGMR, 40KhNR) which, in many cases, can be used as substitutes for steels with high nickel content; stainless steels of the 18-8 type (containing up to 9% Ni) can be successfully replaced by new types of high chromium steels EI657 and EP26, developed at the Moscow Institute of Aeronautical

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Technology, and containing nitrogen and up to 2.5% Ni;  
(2) replacing the Ni-Mo-bearing steels with those containing boron and manganese (15KhRA, 35KhR, 20KhGRA);  
(3) replacing the nickel-base, heat-resistant materials by iron-base alloys; (4) increasing the production of carbon steel base, stainless steel clad products;  
(5) improving the methods of collecting and treating alloy steels scrap. More than 4000 t of tin is consumed annually in the production of tin-plate, the specific consumption of this metal in the hot-tinning process being 21 kg per 1 t of tin-plate; this figure could be reduced to 7 to 8 kg by changing over to electrolytic tinning. Large savings of non-ferrous metals can be attained in the production of secondary non-ferrous alloys; at present, reverberatory furnaces are used for melting certain types of bronzes and brasses; the melting losses, amounting to 9%, could be reduced to 5 to 6% by using electric induction furnaces, whereby 5000 t of non-ferrous metals could be saved annually; in a similar manner, losses of aluminium could be reduced by 4%. Finally, steps

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should be taken to improve the methods of scrap collection and to ensure better classification of this important source of valuable non-ferrous metals. There are 2 tables.

Card 9/9

ISTRIN, M.A.

Basic trends in saving nonferrous metals. Mashinostroitel' no.12:  
1-2 D 160. (MIRA 13:12)

1. Glavnyy spetsialist Gosplana SSSR.  
(Nonferrous metals)

ISTRIN, M.A.; BAZHENOV, M.F., nauchn. red.; SINACHENKO, L.M., red.

[Economy of nonferrous metals and the introduction of their substitutes in industry, transportation, and building] *Ekonomiia tsvetnykh metallov i vnedrenie ikh zami-  
telei v promyshlennosti na transporte i v stroitel'stve.*  
Moskva, 1962. 63 p. (MIRA 17:5)

1. Moscow. Tsentral'nyy institut informatsii tsvetnoy me-  
tallurgii.

FRIDLYANDER, I.N.; ISTRIN, M.A.; GOL'DBUKHT, G.Ye.

Utilizing scrap from ductile aluminum alloys. Alum. splavy  
no.3:326-329 '64. (MIRA 17:6)

ANDREYEV, A.D.; ZASYPKIN, V.A.; ISTRIN, M.A.

Conference on efficient furnace designs for melting aluminum alloys.  
TSvet. met. 38 no.4:73-80 Ap '65. (MIRA 18,5)

L 4175-66 ENT(m)/EPF(c)/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/EM/NB	
ACC NR: AP5024406	SOURCE CODE: UR/0286/65/000/015/0083/0084
INVENTOR: Kulakov, V. I.; Matveyev, A. I.; Ietrim, M. A.; Murzov, A. I.; Fridlyander, I. N.; Bazhenov, M. F.; Belyanskiy, A. A.; Anan'in, S. N.	
ORG: none	7/ B
TITLE: Wrought, aluminum-base alloy. Class 40, No. 173419	
SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 83-84	
TOPIC TAGS: alloy, aluminum base alloy, copper containing alloy, magnesium containing alloy, silicon containing alloy, zinc containing alloy, manganese containing alloy, iron containing alloy, nickel containing alloy, titanium containing alloy, chromium containing alloy, zirconium containing alloy, beryllium containing alloy	
ABSTRACT: This Author Certificate introduces a wrought, aluminum-base alloy with high mechanical properties, corrosion resistance, and workability. The alloy contains 1.8-3% copper, 1.2-2% magnesium, 1.0-1.8% silicon, 3.5-6.0% zinc, 0.1-0.6% manganese, 0.9% max iron, 0.1% max nickel, 0.01-0.2% titanium, 0.05-0.2% chromium, 0.01-0.1% zirconium, and 0.0001-0.001% beryllium. [AZ]	
SUB CODE: MM/ SUBM DATE: 27Jan64/ ORIG REF: 000/ OTH REF: 000/ ATD PRESS: 4127	
Card 1/1 na	UPC: 669.715.018.0

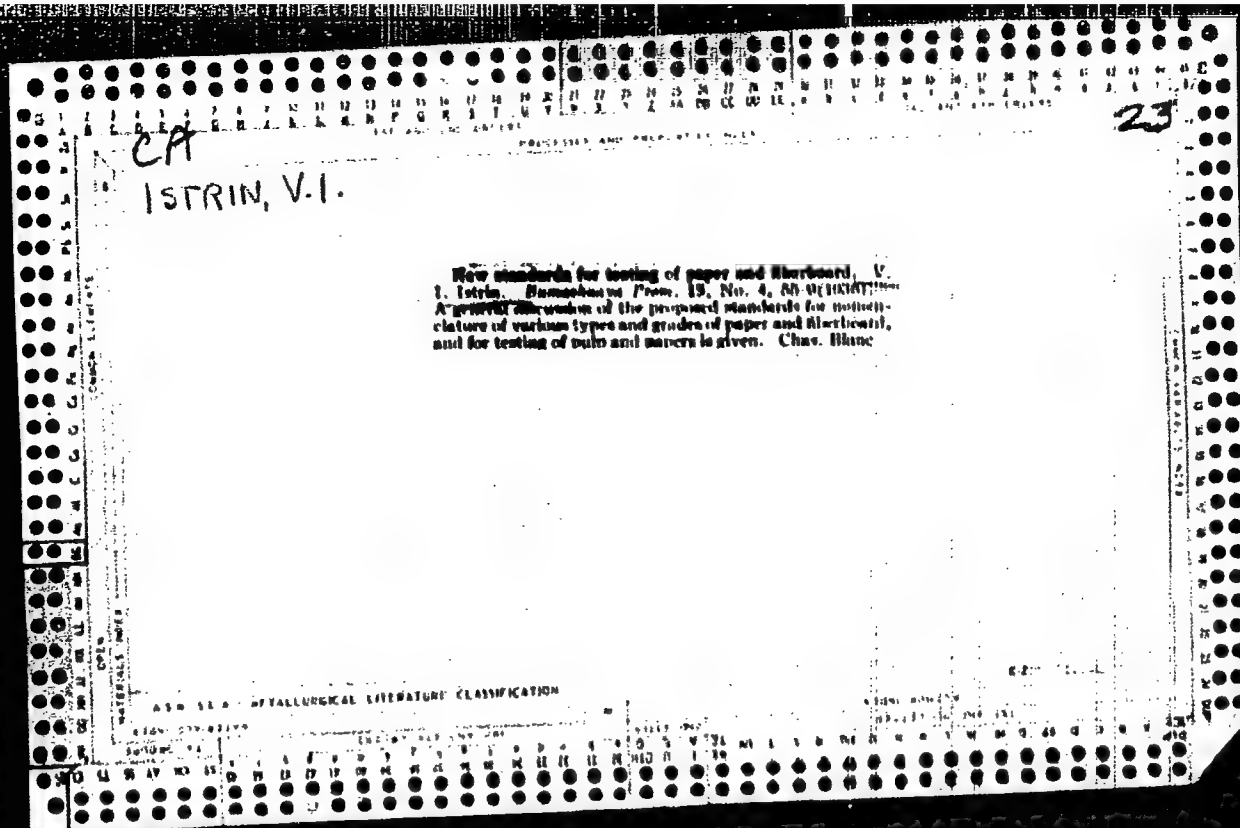
ISTRIN, V. A.

PROCESSES AND PROPERTIES

Paper coating A. Ya. Goncharov and Y. A. Istin.  
Bumazhnaya Prom. 13, Nos. 10-11, 57-AM(184). The  
methods and results of foreign and domestic paper coating  
are critically discussed. Chas. Blanc

ASB-5LA METALLURGICAL LITERATURE CLASSIFICATION





1ST AND 2ND ORDERS																									
1ST ORDER													2ND ORDER												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
ISTRIN, V. A.													PROCESS AND PROPERTIES												
CO													23												
<p>New standards of bleached and unbleached sulfite pulp.  A. Ya. Goncharov and V. A. Istrin, <i>Bumashnaya Prom.</i>  13, No. 6, 51-6(1936) The recently adopted standards  of bleached and unbleached sulfite pulp for the production  of various kinds and grades of paper are discussed.  Chas. Blum.</p>																									
<p>ASB.SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																									
<p>FROM TYPEWRITER</p>																									

ISTEIN, Viktor Aleksandrovich

Printing paper and cardboard  
pod red. G. G. Gil'o, Moskva, Gizlogprom, 1944. 23 p. (Zameniteli v poligrafii)

4Z-472

ISTRIN, V. A.

BERKMAN, Ya. M.

Errors in the description of production and properties of paper.  
(“Knowledge of the printing materials”. V. A. Istrin. Reviewed by  
E. M. Berkman). Bum. prom. 29 no. 5:3 My '54. (MLRA 7:7)  
(Paper) (Istrin, V. A.)

ISTRIN, V.A.

Standardizing the size of printed papers and editions.

Standartizatsia 24 no.8:34-36 Ag '60.

(MIRA 13:9)

(Printing--Production standards)

B-11

CATEGORY : Rumania  
Physical Chemistry--Solutions. Theory of Acids and Bases.

ABS. JOUR. : RZKhim., No. 5 1960, No. 17116

AUTHOR : Vintu, V., Istudor, I., and Eclemea, N.  
INST. : Bucharest Institute for Petroleum and Natural Gas  
TITLE : On the Absorption of Ethylene in Solutions of Amino Complexes

ORIG. PUB. : Lucrarile Inst Petrol si Gaze Bucuresti, 3, 207-217 (1957)

ABSTRACT : The authors have determined the coefficient of absorption of ethylene at room temperature and at pressures of 1-20 atm in solutions of the following amino complexes of Cu(2+):  $[Cu(NH_3)_4]Cl_2$ ,  $[Cu(NH_3)_4](NO_3)_2$ , as well as complexes of Cu(2+) with pyridine:  $[Cu(C_5H_5N)_2](NO_3)_2$ ,  $[Cu(C_5H_5N)_4](NO_3)_2$ , and  $[Cu(C_5H_5N)_4]Cl_2$ , both in the liquid and in the solid state [sic]. The results obtained indicate the formation of compounds between the ethylene and amino complexes of Cu(2+);

CARD: 1/2      \* Research

SOV/123-59-12-46851

Translation from: Referativnyy zhurnal. Mashinostroyeniye, 1959, Nr 12, p 132  
(USSR)

AUTHORS: Khimushin, F.F., Istrina, Z.V.

TITLE: Investigating the Trend of the OKh18N9<sup>14</sup>, 1Kh18N9<sup>16</sup>, and 1Kh18N9T<sup>18</sup>  
Chrome-Nickel Steel Grades to Intercrystallite Corrosion<sup>14</sup>

PERIODICAL: Sb. statey. Vses. n.-i. i konstrukt.in-t khim. mashinostr., 1958,  
Vol 25, pp 11-46

ABSTRACT: The article has not been reviewed.

Card 1/1

SLOMYANSKAYA, F.B., kand.tekhn.nauk [deceased]; SHVARTS, G.I.,  
kand.tekhn.nauk; KHIMUSHIN, F.F., kand.tekhn.nauk; ISTRINA,  
Z.F., inzh.; SIDORKINA, Yu.S., inzh.

Testing for intercrystalline corrosion of stainless austenite  
and austenite-ferrite steels. Trudy NIIKHIMMASH no.27:3-53  
'59. (MIRA 14:8)

(Steel, Stainless--Testing)



KAKHOVSKIY, N. I.; YUSHCHENKO, K. A.; YUSHKEVICH, Z. V.; ISTRINA, Z. F.

Electric arc welding of corrosion resistant ~~OKh21N6M2T~~  
ferritic-austenitic steel. Avtom. svar. 15 no.11:16-24  
N '62. (MIRA 15:10)

1. Ordena Trudovogo Krasnogo Znameni Institut elektrosvarki  
imani Ye. O. Patona AN UkrSSR (for Kakhovskiy, Yushchenko,  
Yushkevich). 2. Vsesoyuznyy nauchno-issledovatel'skiy i  
konstruktorskiy institut khimicheskogo mashinostroyeniya  
(for Istrina).

(Steel, Stainless—Welding)

E 41332-65 ENT(m)/EPF(c)/EWA(d)/EWP(t)/EWP(z)/EWP(s) Pad IJP(c) MJW/

JD/HW/JG/VB

ACCESSION NR: AR5000732

S/0277/64/000/009/0007/0007 32

SOURCE: Ref. zh. Mashinostroitel'nyye materialy, konstruktssi i raschet detaley mashin. Gidropriwod. Otd. vyp., Abs. 9.48.40

AUTHOR: Istrina, Z. F.; Krutnikov, A. N.; Shevelkin, B. N.; Shagiro, M. B.; Akshentseva, A. P.; Khimushin, P. P.; Prolikova, Ye. N.; Belinkiy, P. N.

TITLE: Corrosion resistant properties of chromium nickel steels with lowered nickel content

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinost., vyp. 45, 1963, 76-93

TOPIC TAGS: corrosion resistance, chromium nickel steel, nickel containing alloy, metal corrosion/ steel 0Kh21N5, steel 0Kh21N6M2T, steel 1Kh21N6M2T

steel OKh17N5G9AB, steel 1Kh18N9T, steel 1Kh18N11N2T

TRANSLATION: Results of an investigation of the structure, heat treatment, weldability, pressure working, and corrosion resistance of corrosion resistant steels with reduced nickel content and their

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L 41332-65

ACCESSION NR: AR5000732

welded joints are presented, and the field of application of these steels in the construction of chemical equipment is determined. Because of their corrosion resistance, steels OKh21N5T, OKh21N6M2T, and OKh17N5G9AB can be used as substitutes for steels 1Kh18N9T and 1Kh16N12M2T in a variety of corrosive media, for example, in the production of caprolactam, adipic acid, dimethylterephthalate, citric acid, urea, nitric acid, and others.

PRODUCTION OF CAPROLACTAM, MALIC ACID, DIMETHYLGLUTARATE,  
citric acid, urea, nitric acid, and others.

SUB CODE: MM

ENCL: 00

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2/2

L 10813-63 EWP(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3003442

57  
3  
S/0129/33/000/007/0005/0008

AUTHOR: Akshentseva, A. P.; Istrina, Z. F.; Khimushin, F. F.; Erolikova, Ye. M.

14 16  
TITLE: Phase transformations and corrosion resistance of OKh21N6M2T steel

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 7, 1963, 5-9

TOPIC TAGS: low-nickel stainless steels, ferritic-austenitic stainless steels, structural changes, corrosion resistance, intergranular corrosion, heat treatment, Sigma phase, corrosion rates, nitric acid, phosphoric acid

ABSTRACT: An investigation was made of the phase composition, weldability, and corrosion resistance of OKh21N6M2T steel (0.07% C; 21.0% Cr; 5.66% Ni; 2.3% Mo; 0.47% Ti). In as-delivered condition (15-min annealing at 1000C followed by water quenching), this steel has a ferritic-austenitic structure, containing up to 75%  $\delta$ -ferrite. This structure, however, is not stable; at 500-1000C the steel undergoes complex phase transformations. Tempering at  
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L 10813-63

ACCESSION NR: AP3003442

500—550C for 2 hr causes dispersion hardening of the ferrite and precipitation of chromium carbides along the grain boundaries; 2-hr tempering at 700—950C brings about transformation of the ferrite into secondary austenite, with crystals of the latter forming inside the ferrite grains. Longer holding at 700—950C promotes intensive growth of the secondary austenite crystals, which finally penetrate all the ferrite grains. At the same time, diffusion growth of the primary austenite grains takes place; cooling to room temperature brings about partial martensitic transformation within these grains. With longer holding (50 and 100 hr) at 650—850C, the  $\sigma$ -phase precipitates within the ferrite grains, and the notch toughness of the steel drops from initial 6 to 0.5 kg-m/cm<sup>2</sup>. Annealing at 750C reduces the content of  $\delta$ -ferrite to 45—55%. The structure with a ratio of  $\delta$ -ferrite to secondary austenite of approximately 1:1 appears to be the most stable. When this steel is welded, regardless of the type of welding or the kind of electrode used, recrystallization of the base metal occurs in the weld-adjacent zone, with formation of large grains of  $\delta$ -ferrite, along whose boundaries small crystals of secondary austenite form with cooling. The steel with a Ti/C ratio equal to or exceeding 5, after annealing at 1000C, as well as after sensitizing annealing at 550—650C for 2 hr, is not susceptible to intergranular corrosion in boiling 50% Card 2/3

L 10813-63

ACCESSION NR: AP3003442

and 65% nitric acid or in boiling 50% phosphoric acid. The corrosion rate in phosphoric acid varied from 0.012 to 0.472 g/m<sup>2</sup>-hr (except for 2.11 g/m<sup>2</sup>-hr of specimens sensitized at 650C). Corrosion rates in 50% nitric acid after sensitizing at 500—700C were high (1.45—50.11 g/m<sup>2</sup>-hr). Stabilizing annealing at 700—1000C lowered corrosion rates to 0.192—0.583 g/m<sup>2</sup>-hr. Annealing the steel at temperatures above 1100C increases the ferrite content and lowers corrosion resistance, but tempering at 700C or above restores resistance to intergranular corrosion. In some media this steel has the same corrosion resistance as Kh18N12M2T Cr-Ni-Mo steel and is therefore recommended as a substitute for it. Orig. art. has: 7 figures and 1 table.

ASSOCIATION: NIKhIMMASH

SUBMITTED: 00

DATE ACQ: 02Aug63

ENCL: 00

SUB CODE: 00

NO REF SOV: 002

OTHER: 001

lm/uh  
Card 3/3



LIFERENKO, I.G., kand. tekhn. nauk; ISTRINA, Z.F., inzh.; FROLIKOVA,  
Ye.M., inzh.

Corrosion resistance of OKh21N6M2T cast steel in the production  
of dimethyl terephthalate. Khim. i neft. mashinostr. no.5:29-31  
N '64 (MIRA 18:2)

L 39754-65 EWT(m)/EPT(c)/EWA(d)/EWP(j)/EWP(t)/EWP(n)/EWP(b) 1c-4

ACCESSION NR: AP4047508 MJW/JD/WB/RM S/0129/64/(00/010/0032/0038

AUTHOR: Shvarts, G. L.; Akshentseva, A. P.; Istrina, Z. F.

TITLE: Microcorrosion of structural materials during the production of organic synthetic dyes

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 10, 1964, 32-38

TOPIC TAGS: aniline dye, maleic anhydride, selective corrosion, tail gas recovery, stainless steel, phthalic anhydride, weld joint, isatin, benzathrone, stress corrosion

ABSTRACT: Various types of stainless steel were investigated for the aniline dye industry. In maleic anhydride media, the weld metal of DKh18N9T (0.08 C; 1.22 Mn; 0.50 Si; 17.03 Cr; 8.55 Ni; 0.60 Mn; 0.65 Ti) / Kh18N12M2T (0.08 C; 0.68 Mn; 0.45 Ti) and Kh18N12M3T (0.08 C; 0.76

Mn, 0.50 Si, 17.03 Cr, 8.55 Ni, 0.60 Mo, 0.65 Ti) and Kh18Ni12M2T (0.08 C, 0.59  
Mn, 0.36 Si, 17.8 Cr, 13 Ni, 1.95 Mo, 0.44 Ti) and Kh18Ni12M3T (0.06 C, 0.76  
Mo, 0.57 Si, 17.8 Cr, 14 Ni, 3.5 Mo, 0.41 Ti) specimens displayed a tendency to  
structural selective corrosion with respect to delta-ferrite. The weld joints of

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L 39754-65

ACCESSION NR: AP4047508

OKh23N28M3D3T (0.04 C; 0.53 Mn; 0.46 Si; 23.01 Cr; 16.15 Ni; 3 Mo; 0.50 Ti; 3.83% Cu) specimens having a pure austenitic structure were negligibly affected by general corrosion and those of pure VT-1-1 titanium were entirely corrosion resistant. In the media used in the wet recovery of tail gases for the production of phthalic anhydride, OKh21N5T (0.07 C; 0.99 Mn; 0.52 Si; 20.07 Cr; 5.39 Ni; 0.49% Ti) specimens and their welded joints were slightly affected by general corrosion although individual pitting occurred in the weld metal. Superficial pitting was observed in the weld joints of OKh18N9T specimens. OKh18N12M2T and OKh21N6M2T specimens which contain 1.95% and 2.08% Mo respectively were not affected by either general or pitting corrosion. During the separation of hydrochloric acid in the isatin production, pure VT1-1 Ti proved corrosion-resistant and OKh23N28M3D3T remained sound under the effects of sulfuric acid. During the production of 3-amino-5-sulfosalicylic acid OKh18N12M2T and OKh21N6M2T specimens were appreciably attacked by sulfuric acid, their weld metal having a two-phase structure. In the production of benzathrone, stress corrosion cracking appeared in OKh23N28M3D3T specimens after welding and other types of mechanical working. The steel is applicable provided finished parts are annealed at 950 C for 80 minutes and air cooled to relieve internal resi-

Card 2/3

L 39754-65

ACCESSION NR: AP4047508

dual stresses. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: NIKHIMMASH

SUBMITTED:00

ENCL: 00

SUB CODE: MM

NR REF SOV: 000

OTHER: 000

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Card 3/3

ACCESSION NR: AR4018336

8/0137/64/000/001/1084/1084

SOURCE: RZh. Metallurgiya, Abs. 11538

AUTHOR: Frolov, N. A.; Belinkiy, A. L.; Fedorov, V. K.; Istrina, Z. F.

TITLE: The properties of new foundry corrosion-resistant (stainless) steel, type Kh17M2TL and the area of its application in chemical machine building.

CITED SOURCE: Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr., vy\*p. 43, 84-87

TOPIC TAGS: stainless steel, stainless steelcasting,  
chromium nickel steel, acid resistant steel, corrosion resistant steel

TRANSLATION: Steel has higher casting properties than Cr-Ni-steel of the austenitic class. Casting shrinkage determined on an instrument designed by Bol'shakov amounts to 2.12-2.21%. The flowability was determined according to a spiral probe (with a pouring temperature of 1,400 degrees the length of the spiral is equal to 300 mm; at 1,600 degrees, it is equal to 740 mm). The internal shrinkage blisters were studied on conical and cylindrical probes. In the former, a concentration of shrinkage blisters forms; in the latter, there is a large zone of shrinkage porosity, increasing as the temperature of pouring rises. Heat treatment (annealing at 760-  
Card 1/2

ACCESSION NR: AR4018336

780 degrees for 2 hours) of steel does not influence its mechanical properties and should be conducted for the purpose of removing casting stresses and for averting propensity for intercrystalline corrosion. Steel has good corrosion resistance in 74% boiling acetic acid and at 78% thermic phosphoric acid at 100 degrees, and is recommended as a substitute for Cr-Ni-Steel type 18-8.

SUB CODE: MM

ENCL: 00

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S/0276/64/000/002/G007/G008

ACCESSION NR: AR4027703

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 2G38

AUTHOR: Frolov, N. A.; Belinkiy, A. L.; Fedorov, V. K.; Istrina, Z. F.

TITLE: High-strength casting of new corrosion-resisting (stainless) steels with reduced nickel content

CITED SOURCE: Tr. Vses. n.-t. i konstrukt. in-t khim. mashinostr., vy\*p. 43, 1963, 88-95

TOPIC TAGS: high-strength casting, corrosion-resisting steel, low nickel content, heat treatment, inter-crystal corrosion, steel, nickel steel

TRANSLATION: Steel Kh21N5TL has satisfactory casting properties enabling sufficiently complex castings of high strength to be produced. As a result of heat treatment, the yield point of this steel exceeds by 1.5-2 times that of type 18-8 chromium-nickel steels. Its resistance to corrosion in a number of media approaches that of Kh18N9TL steel. With a percentage ratio  $Ti:C \geq 5$  it is not prone to inter-crystal corrosion. Steel Kh17N4S2L has good casting

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